

References

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P114-e

Acti-met: A new tool to estimate physical activity by measuring caloric expenditure

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Keywords: Physical activity; Caloric expenditure; Therapeutic education

Introduction.— Currently, measurement of physical activity in clinical practice can be done in various ways, including questionnaires, pedometers or accelerometers. However, these tools are underused and physical inactivity is a cardiovascular risk factor rarely evaluated. Furthermore, patients' understanding of the goals of physical activity could be improved by estimating energy expenditure that must be greater than 1000 kcal/week. The objective was to build a new tool to assess physical activity.

Method.— From a compendium of physical activity [1], we divided physical activity into three major categories of intensity (3–4 MET mild, MET 5–7 moderate and intense > 8 MET) each segmented into four types of activity (locomotion, cycling, swimming and others). In order to calculate energy expenditure in kcal, the formula $A \times B \times C$ was used (A = type and intensity of physical activity, B = time in hours, C = weight of the subject).

Results.— This tool corresponds to a slide rule for mapping intensity of activity, duration and weight. Moving the cursor gives the energy expenditure. Recommendations for weekly energy expenditure are recalled on back of the measurement tool.

Discussion.— This new instrument has been found to be convenient to use. It is the result of scientific work in the field of measuring energy expenditure. Prospects include validation in comparison with other means of evaluation of physical activity (survey, accelerometer) and secondly to test its effectiveness in compliance with regular physical activity via an improved educational message.

Reference

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P115-e

Validity of a questionnaire to assess the physical activity level in coronary artery disease patients

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Keywords: Questionnaire; Assessment; Coronary; Validity; Exercise

Purpose.— To compare, in coronary artery disease patients, a subjective measurement of the physical activity (PA) level using the Dijon PA questionnaire (DPAQ), and their true PA using an accelerometer.

Material/Patients and methods.— Seventy patients wore an accelerometer throughout one week after a cardiac-rehabilitation program that included therapeutic education about regular PA. Energy expenditure (EE) was measured during the one-week period with the MyWellness Key actimeter (MWK). PA was classified as “light” (1.8–2.9 METs), “moderate” (3–5.9 METs), or “intense” (> 6 METs). Patients completed the DPAQ at the end of the week. Associations between objectively measured PA and DPAQ total score and sub-scores were studied using Spearman correlation coefficient.

Results.— The mean weekly total active EE was 619.9 ± 374.6 Kcal, and the mean DPAQ score was $21.3 \pm 3.1/30$ points. There were low but significant correlation between total active EE and the DPAQ score ($Rho = 0.4$; $P = 0.009$). There were no correlations between the EE resulting from light-intensity PA and the “daily activity” sub-score, neither between peak power output and total DPAQ score.

Discussion.— The DPAQ significantly correlates with objective measures given by the MWK. The choice between these tools relies on the clinician's appreciation, taking in account patients' characteristics and goals as well as the cost and availability of the method.

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Effects of TENS on walking distance in a patient with peripheral artery disease

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Keywords: Exercise training; TENS; Vascular rehabilitation; PAD

Introduction.— Exercise training (including aerobic treadmill training and strength exercises below and above the level of injury) is a core component of rehabilitation in peripheral artery disease (PAD) patients. Interval training seems to be more effective to increase exercise tolerance, for the management of cardiovascular risk factors and to improve endothelial function. It is now being recommended for cardiac rehabilitation even in patients with very impaired functional abilities. To date, there is no consensus about the optimal method for training in PAD. Guidelines recommend either training at constant intensity and moderate speed during a set time period, or to repeat bouts of walking exercises until the beginning of pain (interspersed with 10 minutes of passive recovery) in order to increase the walking distance. However, this latter modality can be difficult to implement when pain is hard to bear. Thus, finding techniques to help postpone the pain would be interesting in order to improve training efficiency and patient comfort.

Objective.— To assess potential interest of transcutaneous electrical neurostimulation (TENS) during exercise training program in PAD patients.

Methods.— We studied the evolution of walking distance in a 61-year-old man with PAD who performed 18 sessions of supervised exercise training. In half of sessions, transcutaneous electrical neurostimulation (TENS) set at 80 Hz was used during 45 minutes before exercise session.

Results.— We observed that pain symptoms came later after TENS that increased noteworthy the walking distance.

Discussion.— Two phenomenons could explain why the patient browsed a longer walking distance:

- an improvement in oxygen supply by collateral recruitment and vasodilatation;
 - a reduction of pain, which would appear to involve different pathways.
- We conclude that TENS should be further investigated in patients with PAD.

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